$$E_{11} = \frac{\partial u_1}{\partial x_1} = 0 \qquad E_{12} = \frac{1}{2}\left(\frac{\partial u_1}{\partial x_2} + \frac{\partial u_2}{\partial x_1}\right) = S x_2$$

$$E_{21} = S x_2 \qquad E_{22} = 0$$

$$E = \begin{bmatrix} 0 & S x_2 \\ S x_2 & 0 \end{bmatrix}$$

$$\Omega_{11} = 0 \qquad \Omega_{12} = \frac{1}{2}\left(\frac{\partial u_1}{\partial x_2} - \frac{\partial u_2}{\partial x_1}\right) = S x_2$$

$$\Omega_{21} = -S x_2 \qquad \Omega_{22} = 0$$

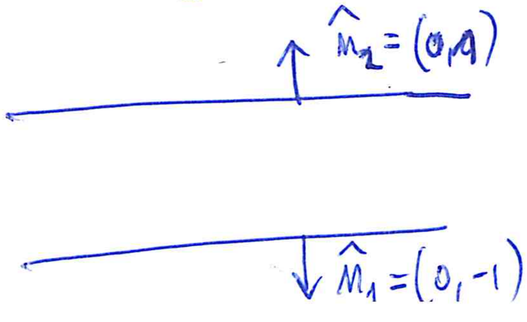
$$\Omega = \begin{bmatrix} 0 & S x_2 \\ -S x_2 & 0 \end{bmatrix}$$

ES 6

$$\Sigma = 2\mu E + \lambda\, \mathrm{tr} E\, I \Rightarrow \Sigma_{ij} = \mu\left(\frac{\partial u_i}{\partial x_j} + \frac{\partial u_j}{\partial x_i}\right) + \lambda \frac{\partial u_k}{\partial x_k}\delta_{ij}$$

$$u = (S x_2, 0) \Rightarrow E = \begin{bmatrix} 0 & S/2 \\ S/2 & 0 \end{bmatrix} \qquad \mathrm{tr} E = \nabla \cdot v = 0$$

$$\Sigma = 2\mu E = \begin{bmatrix} 0 & \mu S \\ \mu S & 0 \end{bmatrix}$$



$$t(\hat{m}_1) = \Sigma \cdot \hat{m}_1 = \begin{bmatrix} 0 & \mu S \\ \mu S & 0 \end{bmatrix} \begin{bmatrix} 0 \\ -1 \end{bmatrix} = \begin{pmatrix} -\mu S \\ 0 \end{pmatrix}$$

$$t(\hat{m}_2) = \Sigma \cdot \hat{m}_2 = \begin{bmatrix} 0 & \mu S \\ \mu S & 0 \end{bmatrix} \begin{bmatrix} 0 \\ 1 \end{bmatrix} = \begin{pmatrix} \mu S \\ 0 \end{pmatrix}$$

$$u = (e x_1, -e x_2) \qquad E = \begin{bmatrix} e & 0 \\ 0 & -e \end{bmatrix}$$

$$\Sigma = \begin{bmatrix} 2\mu e & 0 \\ 0 & -2\mu e \end{bmatrix} \qquad \Sigma \cdot \hat{m}_1 = t(\hat{m}_1) = \begin{bmatrix} 2\mu e & 0 \\ 0 & -2\mu e \end{bmatrix} \begin{bmatrix} 0 \\ -1 \end{bmatrix}$$

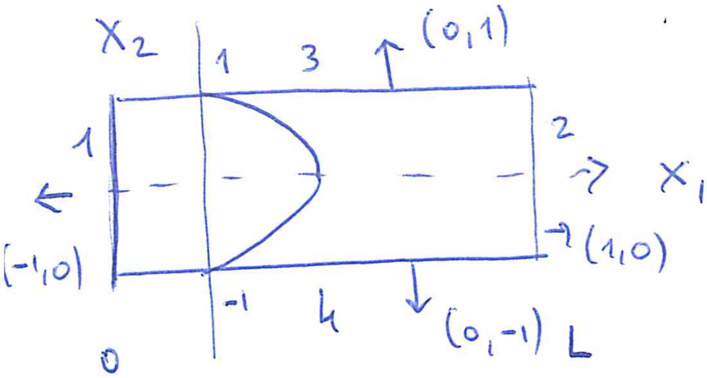
$$= \begin{pmatrix} \cancel{\mu e} \\ -2\mu e \end{pmatrix}$$

$$\Sigma \cdot \hat{m}_2 = t(m_2) = \begin{pmatrix} 0 \\ 2\mu e \end{pmatrix}$$

$$T = -pI + \Sigma \Rightarrow T_{ij} = -p\delta_{ij} + \Sigma_{ij} \qquad p = A x_1 + B$$

$$u = (S(x_2^2 - 1), 0) \qquad T = \begin{bmatrix} -p & 2\mu S x_2 \\ 2\mu S x_2 & -p \end{bmatrix}$$

$$T \cdot m_1 = \begin{bmatrix} -p & 2\mu S x_2 \\ 2\mu S x_2 & -p \end{bmatrix} \begin{bmatrix} 0 \\ -1 \end{bmatrix} = \begin{bmatrix} -2\mu S x_2 \\ p \end{bmatrix} \qquad T \cdot \hat{m}_2 = \begin{bmatrix} 2\mu S x_2 \\ p \end{bmatrix}$$



$$E = \begin{bmatrix} 0 & Sx_2 \\ Sx_2 & 0 \end{bmatrix}$$

$$T = \begin{bmatrix} -p & 2\mu S x_2 \\ 2\mu S x_2 & -p \end{bmatrix}$$

$p(x) = Ax + b$

$p(0) = p_1$

$p(L) = p_2$

$b = p_1$

$A = -\frac{\Delta p}{L}$

$$\oint T \cdot n \, dS = 0 \Rightarrow \int_1 T \cdot n \, dS + \int_2 T \cdot n \, dS + \int_3 T \cdot n \, dS + \int_4 T$$

$$(T \cdot n)_1 = \begin{bmatrix} -p_1 & 2\mu S x_2 \\ 2\mu S x_2 & -p_1 \end{bmatrix} \cdot \begin{bmatrix} -1 \\ 0 \end{bmatrix} = \begin{bmatrix} p_1 \\ -2\mu S x_2 \end{bmatrix}$$

$$(T \cdot n)_2 = \begin{bmatrix} -p_2 & 2\mu S x_2 \\ 2\mu S x_2 & -p_2 \end{bmatrix} \begin{bmatrix} 1 \\ 0 \end{bmatrix} = \begin{bmatrix} -p_2 \\ 2\mu S x_2 \end{bmatrix}$$

$$(T \cdot n)_3 = \begin{bmatrix} -p & 2\mu S \\ 2\mu S & -p \end{bmatrix} \begin{bmatrix} 0 \\ 1 \end{bmatrix} = \begin{bmatrix} 2\mu S \\ -p \end{bmatrix}$$

$$(T \cdot n)_4 = \begin{bmatrix} -p & -2\mu S \\ -2\mu S & -p \end{bmatrix} \begin{bmatrix} 0 \\ -1 \end{bmatrix} = \begin{bmatrix} 2\mu S \\ p \end{bmatrix}$$

me y: $-4\mu S X_2 + 4\mu S X_2 - pl + pl = 0$

me x: $2p_1 - 2p_2 + 4\mu S L = 0$

$2\Delta p = -4\mu S$